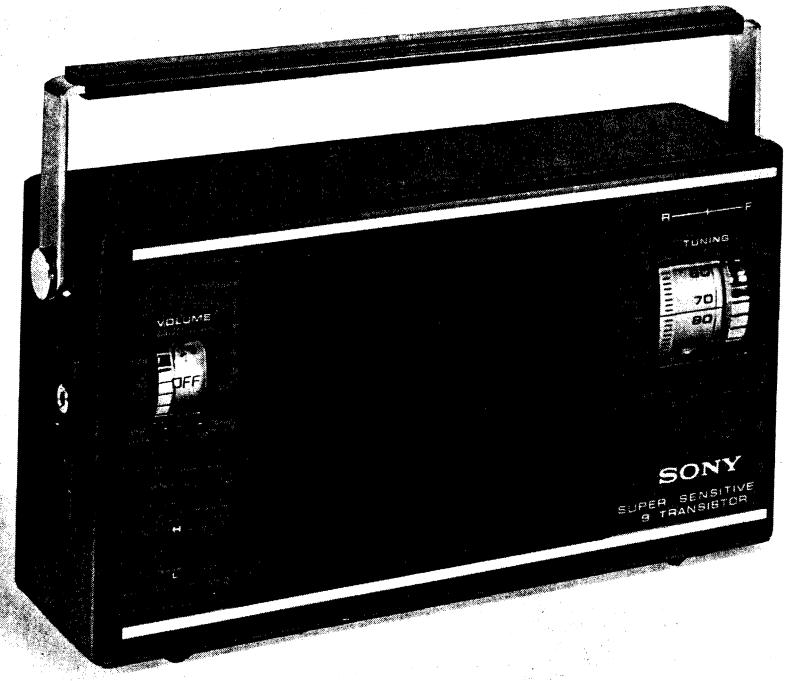
For USA

6R-33

1771



SPECIFICATIONS

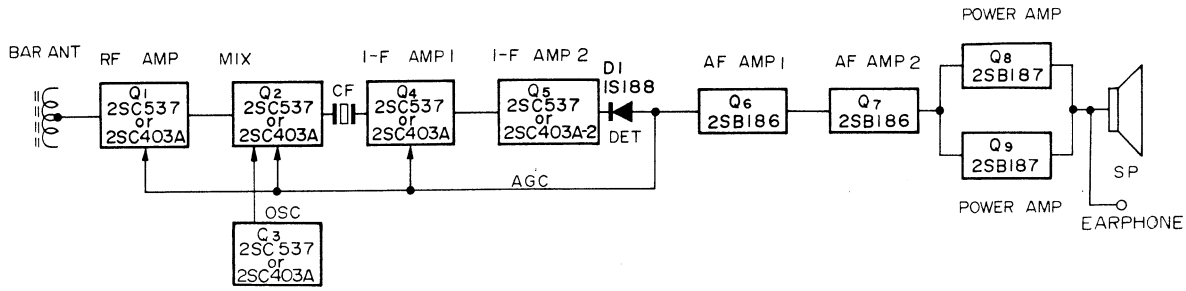
Circuit System:	9-transistor 1-diode superheterodyne
Frequency Coverage:	530 ~ 1,605 kHz (566 ~ 187 m)
Intermediate Frequency:	455 kHz
Antenna System:	Built-in ferrite bar antenna
Power Requirements:	Three "D" size flashlight batteries, 4.5 volt in total or house current by using "SONY" ac adaptor AC-81W (110~120V), AC-33W (110~120V), AC-33E (220~240V)
Power Output:	240 mW (undistorted) 400 mW (maximum)
Current Drain:	8 mA at zero signal, 100 mA at 240 mW output
Maximum Sensitivity: (at 50 mW output)	25 μV/m
Selectivity:	22 dB at 10 kHz off resonance at 1,400 kHz
Speaker:	3½" (92 mm) PM dynamic, 8Ω
Dimensions:	8 1/16" (W) × 4¾" (H) × 2¾" (D) (220 × 120 × 70 mm)
Weight:	1 lb 15 oz (900g) without batteries

SONY®

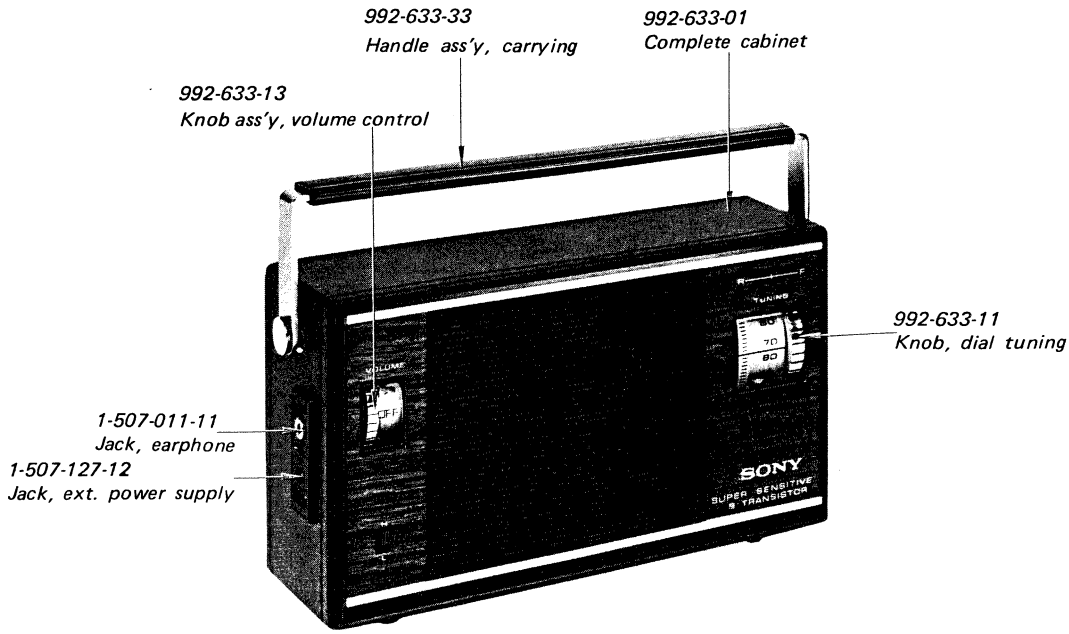
SERVICE MANUAL

1771

BLOCK DIAGRAM



EXTERNAL VIEW



INTERIOR VIEW

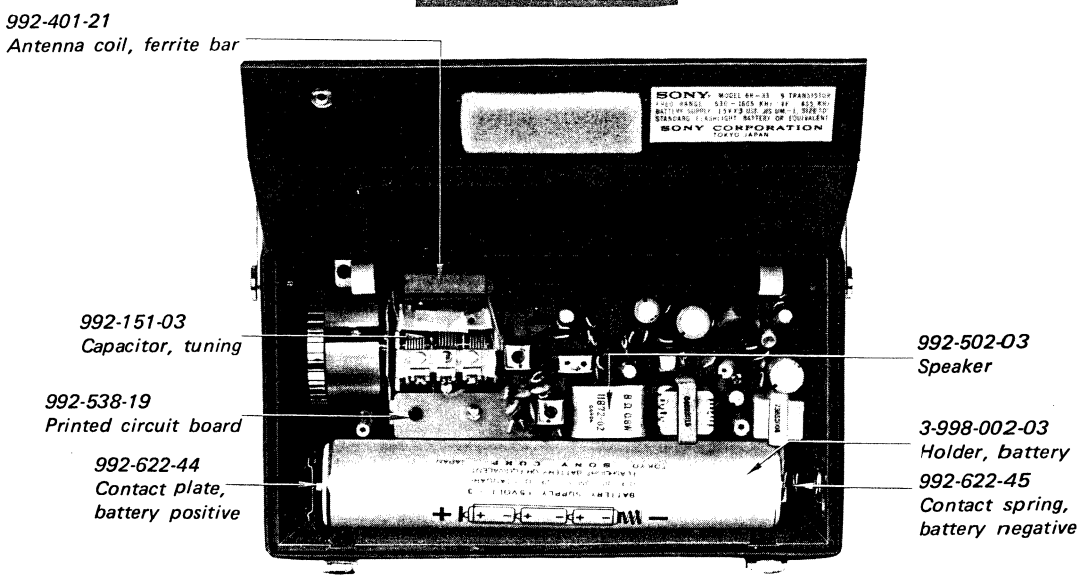


Fig. 2

SONY CORPORATION

Complete Spare Parts List for 6R-33

Part No.	Description	Unit Price
A.	Cabinet and Appearance Items	
992-633-01	Complete Cabinet, including ----------	
992-633-27-1	Cover, dial indicator ----------	
992-633-27-2	Cover, volume control ----------	
992-633-34-1	Sash, upper ----------	
992-633-34-2	Sash, lower ----------	
992-633-28-1	Panel, front (RF indicating) ----------	
992-633-28-2	Panel, front (tone indicating) ----------	
992-633-33	Handle Assembly, carrying ----------	
992-622-35-2	Escutcheon, jack ----------	
992-633-71-1	Cushion, battery ----------	
992-633-72	Specification Label ----------	
992-633-73	Holder Ass'y, carrying handle ----------	
	* * * *	
992-633-11	Knob, dial tuning ----------	
992-633-48	Drum Ass'y, dial tuning ----------	
992-633-13	Knob Ass'y, volume control ----------	
B.	Mechanical Parts	
992-633-54	Fixing Metal, volume control ----------	
992-633-55	Fixing Metal, dial tuning drum ----------	
992-611-42-1	Holder-A, ferrite bar antenna ----------	
992-611-42-2	Holder-B, ferrite bar antenna ----------	
992-611-71-2	Cushion, tuning capacitor ----------	
992-611-43	Bracket, tone switch ----------	
992-622-44	Contact Plate, battery positive ----------	
992-622-45	Contact Spring, battery negative ----------	
992-611-41	Metal, speaker retaining ----------	
992-633-50	Boss ----------	
3-998-002-03	Holder, battery ----------	
992-611-76	Ribbon, battery ----------	
C.	Electrical Parts	
992-502-03	Speaker ----------	

Part No.	Description	Unit Price
992-538-19	Printed Circuit Board ----------	
1-507-011-11	Jack, earphone ----------	
1-507-127-12	Jack, ext. power supply ----------	
992-513-01	Switch, tone control ----------	
	Potentiometer	
992-221-03	Volume Control ----------	
	Variable Capacitor	
992-151-03	Capacitor, tuning ----------	
	Coil and Transformer	
992-401-21	Antenna Coil, ferrite bar ----------	
992-405-04	Coil, oscillator ----------	
992-425-01	Coil, R.F. ----------	
1-403-163	Filter, I.F. ----------	
1-403-128	Transformer, I.F. ----------	
992-423-03	Transformer, driver ----------	
992-427-03	Transformer, output ----------	
	Semiconductor	
	Transistor 2SC537E (2SC403A-5) Q1 ----------	
	2SC537E (2SC403A4 or 5) Q2 ----------	
	2SC537F (2SC403A5) Q3 ----------	
	2SC537F (2SC403A5) Q4 ----------	
	2SC537G (2SC403A2) Q5 ----------	
	2SB186A Q6 ----------	
	2SB186A Q7 ----------	
	2SB187C Q8 ----------	
	2SB187C Q9 ----------	
	Diode 1S188AM D ----------	
8-691-001-11	Thermistor CS120 Th ----------	
	Composition Rsistor	
1-244-602	R25 1.1Ω ----------	
1-201-409	R23 4.7Ω ----------	
1-201-100	R7,16,18 100Ω ----------	
1-201-081	R26 220Ω ----------	
1-201-096	R1 470Ω ----------	
1-201-021	R2,5,6,11,13,14,17, 19,22 1kΩ ----------	

Part No.	Description		Unit Price
1-201-084	R24	3.3kΩ ----------	
1-201-086	R21	5.6kΩ ----------	
1-201-041	R3,9,12	10kΩ ----------	
1-201-087	R20	22kΩ ----------	
1-201-687	R4	27kΩ ----------	
1-201-052	R8,10	47kΩ ----------	
1-202-802	R15	150kΩ ----------	
	Electrical Capacitor		
1-121-359	C17,24	470μF - 6.3V ----------	
1-121-295	C12	220μF - 6.3V ----------	
1-121-284	C3,22	233μF - 6.3V ----------	
1-121-463	C9,19,18	4.7μF - 16V ----------	
	Mylar Capacitor		
1-105-148-12	C23	0.1μF ±20% ----------	
1-105-841	C21	0.047μF ±20% ----------	
1-105-837	C13,15	0.022μF ±20% ----------	
1-105-833	C10,14,16	0.01μF ±20% ----------	
1-105-829	C7,8,11	0.005μF ±20% ----------	
1-105-821	C20	0.001μF ±20% ----------	
	Ceramic Capacitor		
1-101-141	C1,2,4,5,6	0.01μF +80 -20% ----------	

D. Screw and Washer

	Screw		
7-621-261-32	(+) P 3ø x 5	(for Tuning Capacitor) ----------	
7-621-261-43	(+) P 3ø x 6	(for Fixing Metal) ----------	
7-621-261-72	(+) P 3øx 12	(for Dial Drum) ----------	
7-621-461-52	(+) T 3ø x 8	(for Rear Cabinet) ----------	
7-621-559-52	(+) K 2.6ø x 8	(for Volume Control Knob, Tuning Knob) ----------	
7-621-722-68	Tapping (+) P 3ø x 10	(for PC Board, Dial Drum Fixing Metal) ----------	
7-621-722-45	Tapping (+) P 3ø x 6	(for Tone Switch Bracket) ---	
7-621-720-36	Tapping (+) P 2ø x 6	(for Jack Escutcheon) -------	
	Nut		
7-622-108-09	3ø	(for Carrying Handle Holder) ----	

Part No.	Description	Unit Price
	Washer	
7-623-208-21	Spring 3ø (for Fixing Metal) ----------	
-411-07	Ext. Tooth 4.5ø (for Carrying Handle Holder) ------	
E. Attached Items		
992-633-87	Styrol Foam Cushion ----------	
992-633-89	Individual Carton Box ----------	
0-029-425-00	Bag, polyethylene ----------	
992-633-84	Instruction Manual ----------	
1-528-001	Battery ----------	
992-504-01	Earphone ----------	

BACK COVER OPENING

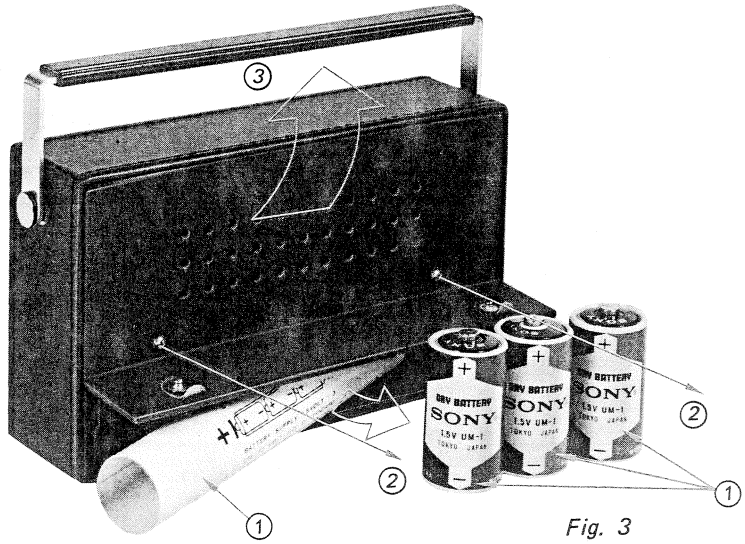


Fig. 3

① Take out three batteries and a battery holder.
② Remove two screws.
③ Open back cover.

CHASSIS REMOVAL

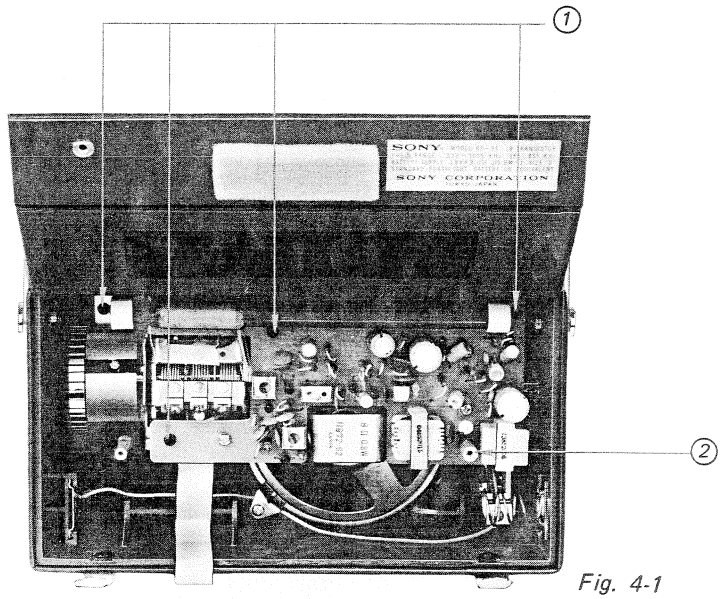


Fig. 4-1

① Remove four screws (black).
② Remove a boss.

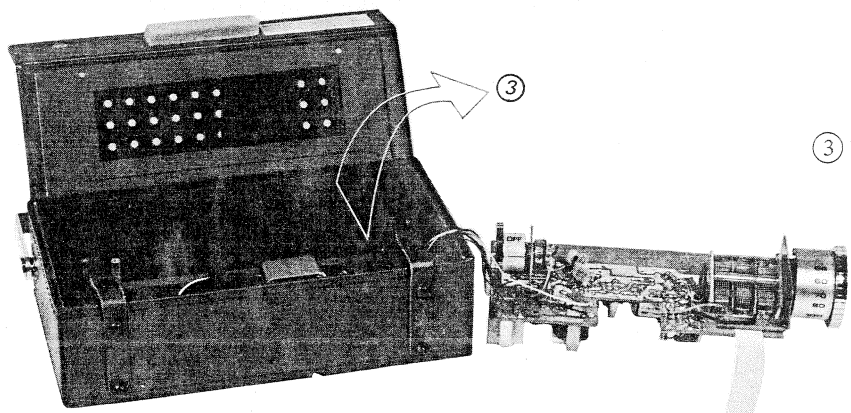


Fig. 4-2

③ Take out chassis as shown by the arrow.

FREQUENCY COVERAGE AND TRACKING ADJUSTMENT

Adj. Item	RF Signal Generator Coupling	RF Signal Generator Frequency	TUNING Knob Setting	VTVM Connection	Adjust (see Fig. 5-2)	Remarks
Frequency coverage	Loop antenna	520 kHz (1,000 Hz 30% a-m)	Fully downward	To EARPHONE jack with 8 Ω resistor in parallel	Osc coil (L3)	VOLUME : MAX Tone switch: H Power requirement: dc 4.5V
		1,680 kHz (,,)	Fully upward		Osc trimmer (CT-3)	Adjust for maximum meter reading.
Tracking	—ditto—	620 kHz (,,)	Tune to 620 kHz signal	—ditto—	Rf coil (L2) Antenna coil (L1)	
		1,400 kHz (,,)	Tune to 1,400 kHz signal		Antenna trimmer (CT-1) Rf trimmer (CT-2)	

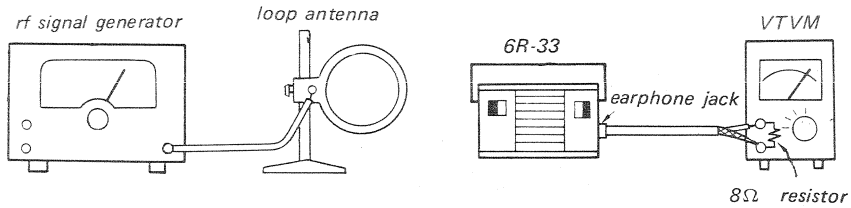


Fig. 5-1 Frequency coverage and tracking adjustment set-up

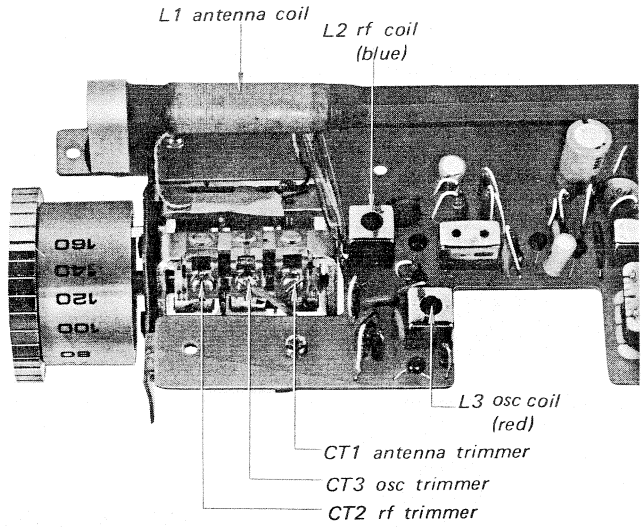
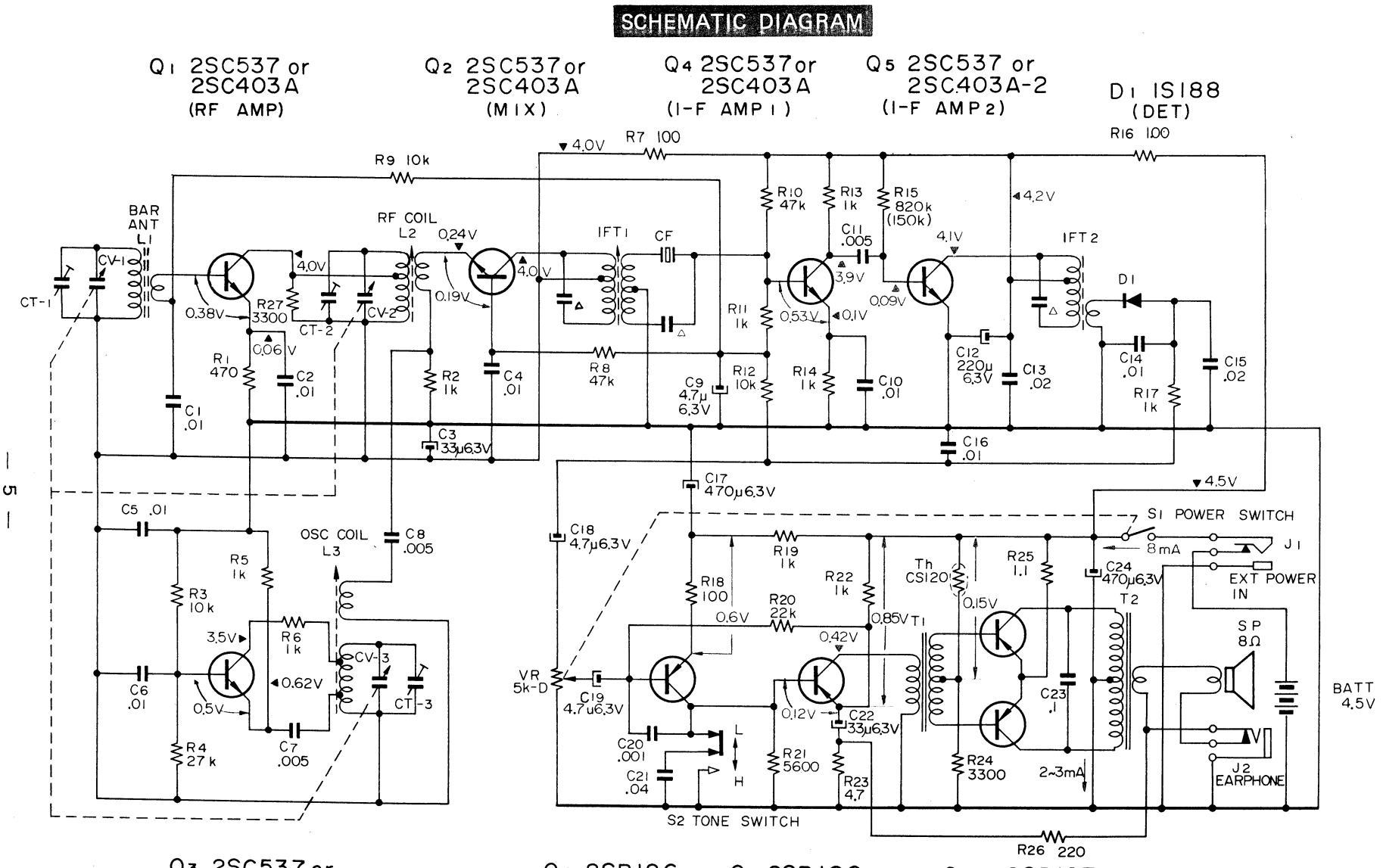


Fig. 5-2 Adjusting parts location

SCHEMATIC DIAGRAM



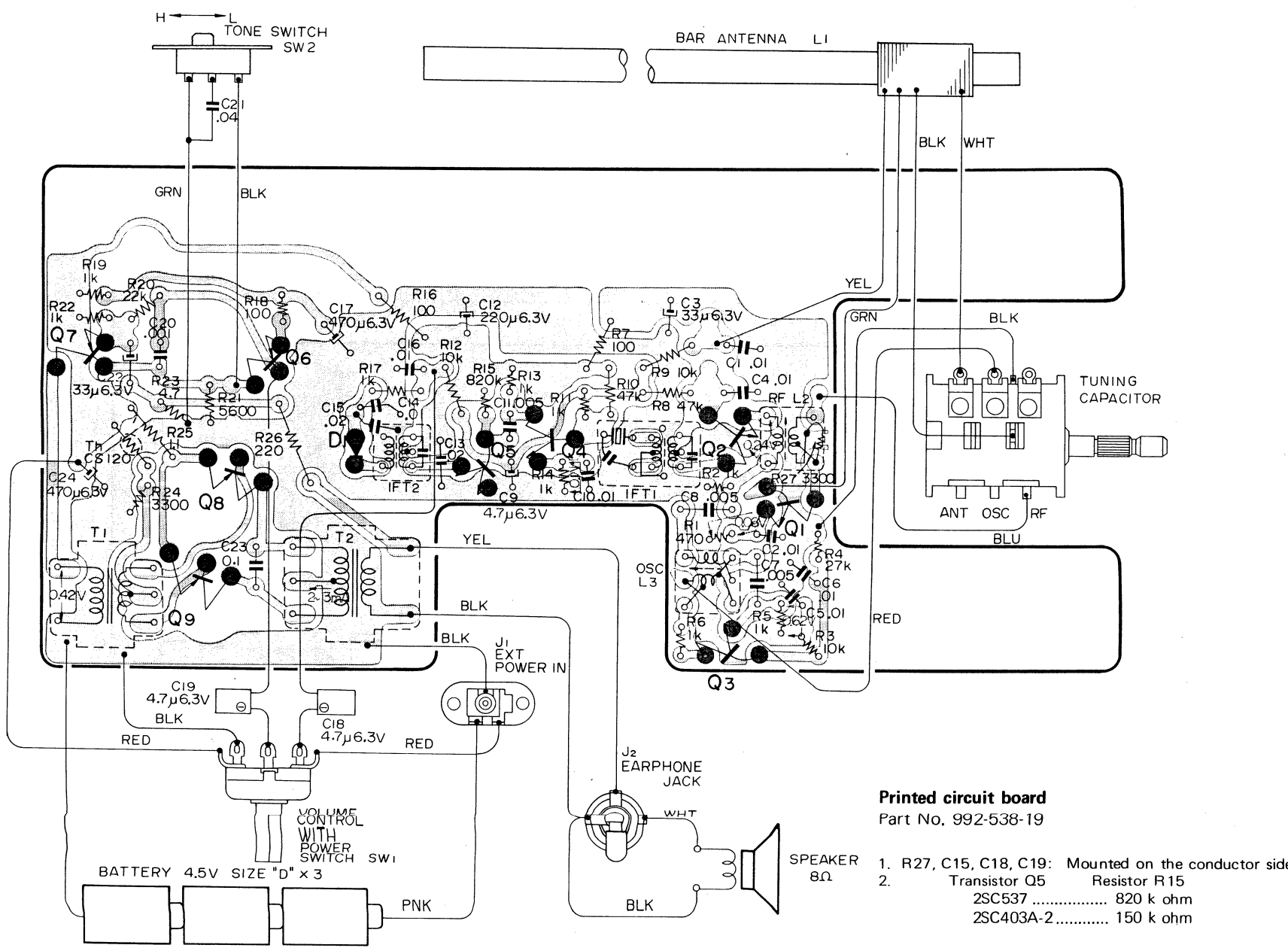
NOTE:

1. All resistors and capacitors are in Ω and µF, unless otherwise indicated.
2. Capacitors marked with △ are bulit in i-f transformers.
3. Voltage values shown are measured with a dc voltmeter (20 kΩ/volt) with no radio signal received.
   Variations may be noted due to normal production tolerances.
4. Current values shown are measured with a dc ammeter with no radio signal received.
5.

Transistor Q5	Resistor R15
2SC537	820 k ohm
2SC403A-2	150 k ohm

MOUNTING DIAGRAM

— Conductor Side —



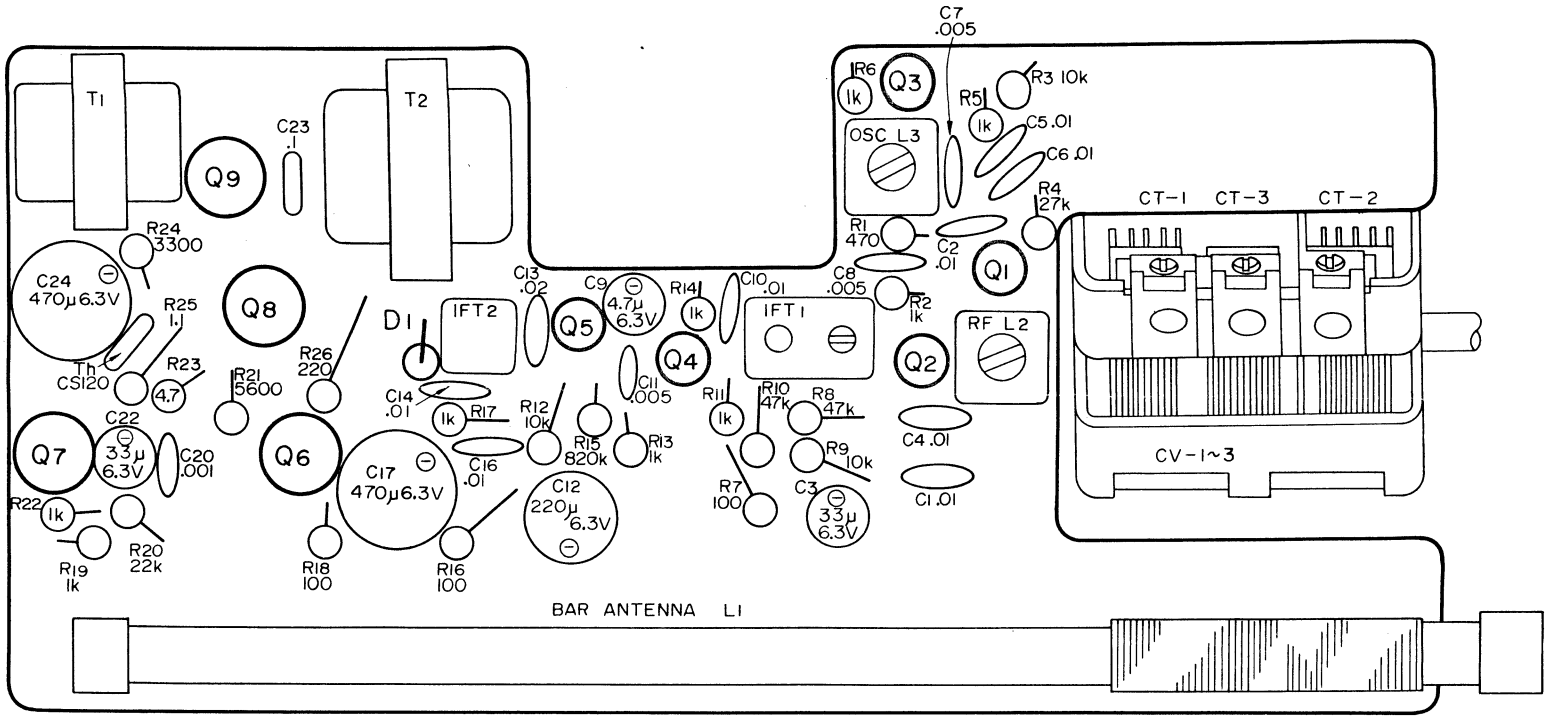
Printed circuit board
Part No. 992-538-19

1. R27, C15, C18, C19: Mounted on the conductor side.
2.

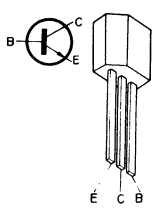
Transistor Q5	Resistor R15
2SC537	820 k ohm
2SC403A-2	150 k ohm

MOUNTING DIAGRAM

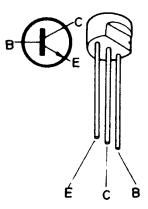
Component Side



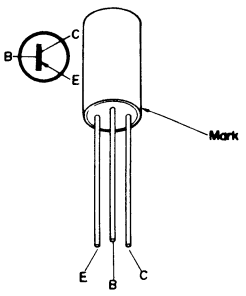
Q1 2SC403A
Q2 "
Q3 "
Q4 "
Q5 2SC403A-2



Q1 2SC537
Q2 "
Q3 "
Q4 "
Q5 "



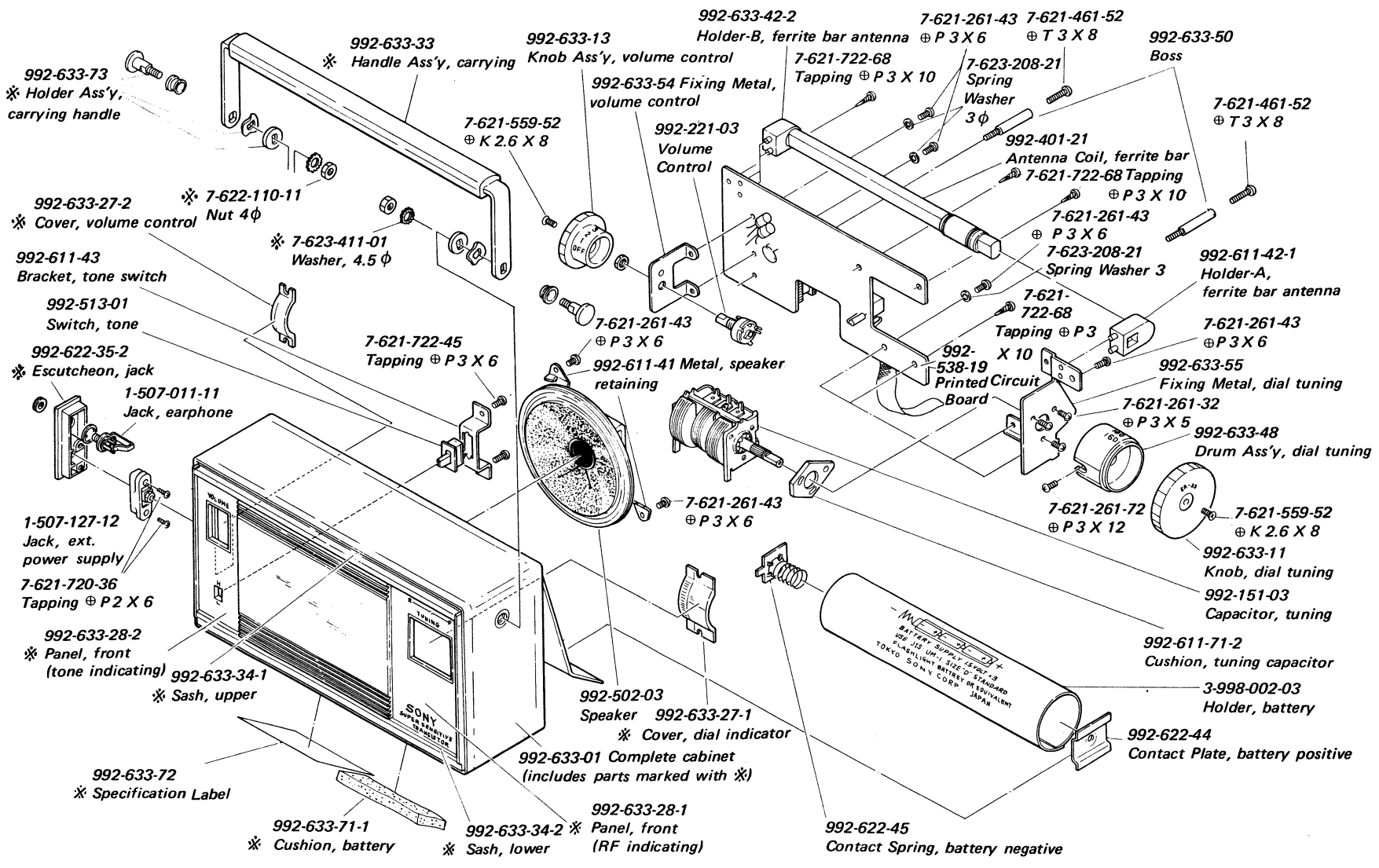
Q6 2SB186
Q7 "
Q8 2SB187
Q9 "



Printed circuit board
Part No. 992-538-19

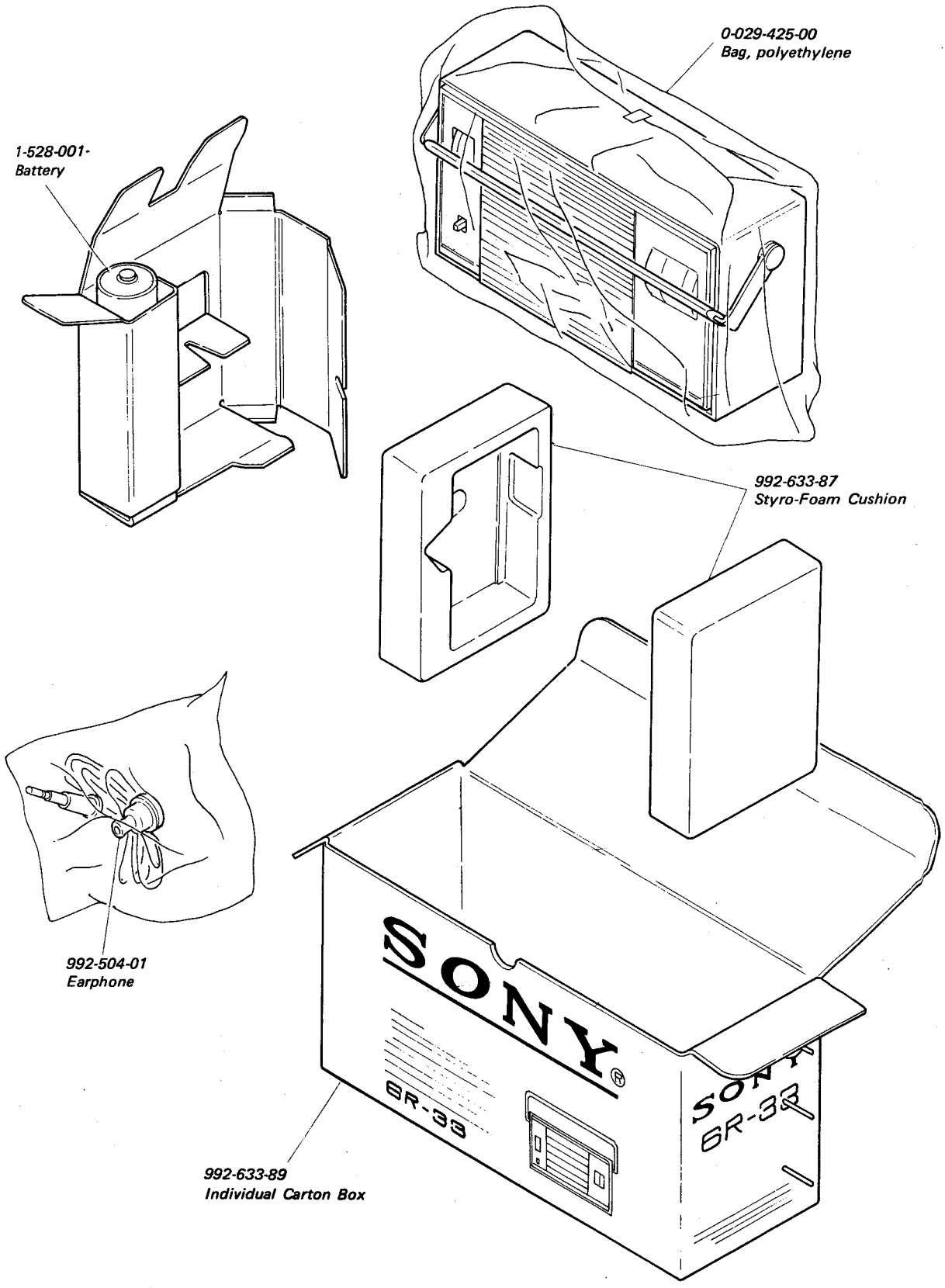
6R-33 6R-33

EXPLODED VIEW



Parts marked with ※ are included in complete cabinet.

PACKING


0-029-425-00
Bag, polyethylene
1-528-001-
Battery
992-633-87
Styro-Foam Cushion
992-504-01
Earphone
992-633-89
Individual Carton Box
SONY
6R-33

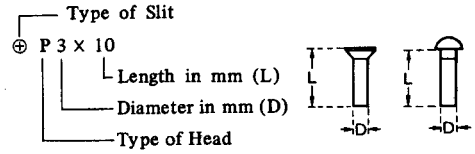
—— Hardware Nomenclature ——

P – Pan Head Screw .....
K – Flat Countersunk Head Screw .....
B – Binding Head Screw .....
RK – Oval Countersunk Head Screw .....
T – Truss Head Screw .....
R – Round Head Screw .....
F – Flat Fillister Head Screw .....
SC – Set Screw .....

E – Retaining Ring (E Washer) .....

W – Washer
SW – Spring Washer
LW – Lock Washer
N – Nut

— Example —



When ordering replacement parts, you should use PART NUMBER listed on the Complete Spare Parts List attached herewith or shown in the EXPLODED VIEW.
The symbol number should not be used for ordering purposes.

SONY CORPORATION